

Adopting a new cleaner disinfectant to optimise cleanliness and improve the staff experience

LISA EASTMEAD, Senior Infection Prevention and Control / Tissue Viability CNS,
Yeovil District Hospital NHS Foundation Trust

Improvement Issue and Context

It is now widely acknowledged that contaminated surfaces make an important contribution to the transmission of many nosocomial pathogens¹ and that a clean clinical environment plays an essential role in reducing the risk of healthcare associated infection (HCAI).²

A clean clinical environment reduces the risk posed by direct contact between patients and the environment and in addition it is also proven to reduce the bioburden carried on healthcare worker (HCW) hands.³ With up to 40% of nosocomial infections attributed to cross infection via HCW hands⁴ any intervention that can benefit hand hygiene practices should be carefully considered.

Whether patients are placed at risk of an infection as a direct result of interaction with their environment or via the hands of a HCW, creating and maintaining the cleanest possible clinical environment should be a key consideration for all Infection Prevention and Control staff.

Staff at Yeovil District Hospital NHS Foundation Trust used a range of products which included standard detergent, disinfectant wipes and hypochlorite for cleaning and disinfecting the clinical environment (including high touch surfaces) and medical equipment. Some staff had complained of breathing problems when performing their cleaning duties and the use of hypochlorite was damaging some surfaces.

Aims and Objectives

Infection Prevention and Control (IP&C) and Facilities Management wanted to identify and adopt a new disinfectant/cleaner, single step, non-corrosive, user friendly product which would enable the number of products used for cleaning and disinfection to be rationalised while simultaneously improving environmental cleanliness and the staff experience.

Methods and Measurement

IP&C and Facilities Management identified TECcare® CONTROL as potentially meeting their requirements for a single stage, easy to use, non-corrosive disinfectant/cleaner. A multidisciplinary team was convened in order to assess and confirm the technical specifications of the product range prior to a formal in-use product evaluation being performed.

Once the team had reviewed the necessary technical data they were happy to sanction the in-use product evaluation to determine how the products performed in terms of environmental cleanliness [using Adenosine Triphosphate (ATP) swab testing of multiple high-touch surfaces], ease of use and user acceptance.

A 28 bedded care of the elderly ward was used to determine product performance. Existing cleaning / disinfection products were used for week 1 (providing 'baseline' ATP readings for comparison), then TECcare® CONTROL (wipes and solution with SMARTpump Technology) (see Figure 1) were used for cleaning and disinfection of all clinical environmental surfaces and equipment for week 2. No other variables were changed.



Figure 1.
TECcare®
CONTROL
solution with
SMARTpump
technology
and TECcare®
CONTROL wipes

Adenosine Triphosphate swab testing took place every two days at 25 predetermined high touch locations. Data from this testing was used to compare product performance and staff completed product evaluation forms at the end of week two.

Swab test locations and results are detailed in Table 1.

Evidence of Improvement

Based on the ATP swab test results, 24/25 high touch surfaces were physically cleaner when TECcare® CONTROL was used in place of the existing cleaning and disinfection products. Sixteen of these 24 locations demonstrated an 80%+ improvement in cleanliness when using TECcare® CONTROL (see Table 1).

Staff reported the TECcare® CONTROL products (both the concentrate with SMARTpump technology and the wipes) as being 'better' or 'significantly better' than the existing products in the following areas: ease of use; cleaning ability; user friendliness; drying speed; product range; product dilution and mixing and overall view of the products. In addition, use of TECcare® CONTROL enabled Facilities Management to reduce the number of products used for cleaning and disinfection from six to three, thereby simplifying the cleaning and disinfection protocols for Trust staff.

Table 1. ATP swab test results [in Relative Light Units (RLU)] for 'Standard cleaning and disinfection' vs. 'TECcare® CONTROL'

SWAB TEST LOCATION	MEAN RLU (RANGE)		% DIFFERENCE (FAVOURS TECcare®) (FAVOURS CHLORINE)
	Standard cleaning and disinfection	TECcare® CONTROL	
Ward door surface	307 (162 – 428)	3 (0 – 8)	99
Hand gel dispenser	125 (100 – 140)	32 (12 – 56)	74
Ward door plate	217 (94 – 388)	24 (14 – 30)	89
Toilet flush handle	125 (45 – 169)	16 (6 – 30)	87
Bathroom nurse call	278 (27 – 751)	11 (5 – 19)	96
Door handle	111 (83 – 148)	8 (0 – 16)	93
Work surface	56 (2 – 97)	22 (17 – 25)	61
Black keyboard	397 (356 – 442)	258 (126 – 397)	35
Swift Blue Keyboard	4028 (1881 – 6523)	64 (38 – 98)	98
Tx room work surface	123 (51 – 213)	84 (14 – 225)	31
Reception desk phone	50 (23 – 64)	58 (20 – 119)	-17
Light Switch	724 (141 – 1750)	22 (0 – 58)	97
Bed Table	241 (25 – 544)	13 (2 – 29)	95
Bedside Locker Top	44 (18 – 84)	11 (9 – 13)	76
Bed Rail	974 (48 – 2003)	17 (1 – 29)	98
Thermometer	321 (255 – 421)	45 (0 – 74)	86
Sats Probe	237 (163 – 344)	63 (12 – 140)	74
BP monitor	193 (93 – 334)	56 (7 – 132)	71
Staff portable desk	59 (16 – 110)	31 (4 – 69)	48
Call bell	1071 (178 – 2743)	61 (18 – 84)	94
Chair arm	413 (154 – 591)	42 (16 – 78)	90
Notes trolley	753 (128 – 1774)	21 (18 – 22)	97
Sit on scales	219 (119 – 361)	21 (17 – 24)	90
Sluice door handle	166 (72 – 227)	26 (13 – 46)	84
Commode handle	78 (15 – 155)	22 (18 – 29)	72
MEAN SCORE	452 (44 – 4028)	41 (3 – 258)	91

Discussion / Conclusion

A clean clinical environment will help to reduce the risk of nosocomial pathogen transmission (either directly or via the hands of HCW) and therefore the risk of HCAI.^{1,2}

ATP swab testing is an accepted method with which to quantify clinical environmental cleanliness.⁵ In this evaluation ATP swab testing clearly demonstrates that TECcare® CONTROL products can create and maintain a cleaner clinical environment compared to existing cleaning / disinfection products and processes. This improvement in environmental cleanliness offers benefits in terms of HCAI risk reduction.

TECcare® CONTROL products meet the needs of IP&C and Facilities Management in terms of product performance, staff acceptance, ease of use, product safety and by being non-corrosive (i.e. gentle on surfaces). In addition TECcare® CONTROL replaces three existing products and thereby simplifies the cleaning and disinfection protocols for Trust staff.

September 2013 has seen Trust wide adoption of TECcare® CONTROL for cleaning and disinfection of all clinical environmental surfaces.

References

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Poster produced by TECcare® in association with Yeovil District Hospital NHS Foundation Trust. TECcare® have provided the author of this poster with conference sponsorship only. No other funding has been provided.



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